



## High ambient temperature and mortality: A review of epidemiologic studies from 2001 to 2008

**Author(s):** Basu R  
**Year:** 2009  
**Journal:** Environmental Health : A Global Access Science Source. 8: 40

### Abstract:

**BACKGROUND:** This review examines recent evidence on mortality from elevated ambient temperature for studies published from January 2001 to December 2008. **METHODS:** PubMed was used to search for the following keywords: temperature, apparent temperature, heat, heat index, and mortality. The search was limited to the English language and epidemiologic studies. Studies that reported mortality counts or excess deaths following heat waves were excluded so that the focus remained on general ambient temperature and mortality in a variety of locations. Studies focusing on cold temperature effects were also excluded. **RESULTS:** Thirty-six total studies were presented in three tables: 1) elevated ambient temperature and mortality; 2) air pollutants as confounders and/or effect modifiers of the elevated ambient temperature and mortality association; and 3) vulnerable subgroups of the elevated ambient temperature-mortality association. The evidence suggests that particulate matter with less than 10  $\mu\text{m}$  in aerodynamic diameter and ozone may confound the association, while ozone was an effect modifier in the warmer months in some locations. Nonetheless, the independent effect of temperature and mortality was withheld. Elevated temperature was associated with increased risk for those dying from cardiovascular, respiratory, cerebrovascular, and some specific cardiovascular diseases, such as ischemic heart disease, congestive heart failure, and myocardial infarction. Vulnerable subgroups also included: Black racial/ethnic group, women, those with lower socioeconomic status, and several age groups, particularly the elderly over 65 years of age as well as infants and young children. **CONCLUSION:** Many of these outcomes and vulnerable subgroups have only been identified in recent studies and varied by location and study population. Thus, region-specific policies, especially in urban areas, are vital to the mitigation of heat-related deaths.

**Source:** <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2759912>

### Resource Description

#### Exposure : ☑

weather or climate related pathway by which climate change affects health

Air Pollution, Temperature

**Air Pollution:** Interaction with Temperature, Ozone, Particulate Matter

**Temperature:** Extreme Heat

#### Geographic Feature: ☑

# Climate Change and Human Health Literature Portal

resource focuses on specific type of geography

Ocean/Coastal, Urban

## **Geographic Location:**

resource focuses on specific location

Non-United States, United States

**Non-United States:** Africa, Asia, Australasia, Europe, Central/South America, Non-U.S. North America

**African Region/Country:** African Country

**Other African Country:** South Africa

**Asian Region/Country:** India, Other Asian Country

**Other Asian Country:** Thailand; South Korea; Lebanon

**European Region/Country:** European Country

**Other European Country :** Slovenia; Romania; Bulgaria; United Kingdom; Italy; Ireland; Spain

## **Health Impact:**

specification of health effect or disease related to climate change exposure

Cardiovascular Effect, Morbidity/Mortality, Respiratory Effect

**Cardiovascular Effect:** Other Cardiovascular Effect

**Cardiovascular Disease (other):** cardiovascular mortality

**Respiratory Effect:** Other Respiratory Effect

**Respiratory Condition (other) :** respiratory mortality

**Population of Concern:** A focus of content

## **Population of Concern:**

populations at particular risk or vulnerability to climate change impacts

Children, Elderly, Low Socioeconomic Status, Racial/Ethnic Subgroup

**Other Racial/Ethnic Subgroup:** Black

**Other Vulnerable Population:** women

## **Resource Type:**

format or standard characteristic of resource

Review

## **Timescale:**

time period studied

Time Scale Unspecified